

CLAIMS

1. An electrocatalyst ink comprising one or more electrocatalyst metals and one or more proton-conducting polymers, characterised in that the electrocatalyst ink further comprises
5 particulate graphite which is present at a loading of 1 to 40 weight % with respect to the weight of the electrocatalyst.
2. An electrocatalyst ink according to claim 1, wherein the particulate graphite is present at a loading of 2 to 25 weight % with respect to the weight of the electrocatalyst.
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3. An electrocatalyst ink according to claim 1 or claim 2, wherein the electrocatalyst metal is platinum.
4. An electrocatalyst ink according to any preceding claim, wherein the electrocatalyst
15 is either a supported metal catalyst or an unsupported finely divided metal black.
5. An electrocatalyst ink according to claim 4, wherein the electrocatalyst metal is supported on a high surface area particulate carbon.
- 20 6. An electrocatalyst ink according to any preceding claim, wherein at least 75 weight % of the solvent is water.
7. An electrocatalyst ink according to any preceding claim, wherein the solids content of the electrocatalyst ink is between 5 and 50 weight %.
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8. An electrocatalyst ink according to any preceding claim, wherein the weight ratio of the electrocatalyst: proton-conducting polymer is between 1:1 and 10:1.
9. A process for preparing an electrocatalyst ink according to any one of claims 1 to 8,
30 said process comprising mixing one or more electrocatalyst materials with the one or more proton-conducting polymers and the particulate graphite in a liquid medium, which may be aqueous or organic.

10. A process for preparing an electrocatalytic layer using an electrocatalyst ink according to any one of claims 1-8, said process comprising applying the electrocatalyst ink to a substrate.

5 11. A gas diffusion electrode comprising a gas diffusion substrate and an electrocatalytic layer prepared using an electrocatalyst ink according to any one of claims 1 to 8.

12. A catalyst coated membrane comprising a solid polymer membrane and an electrocatalytic layer prepared using an electrocatalyst ink according to any one of claims
10 1 to 8.

13. A membrane electrode assembly comprising an electrocatalytic layer prepared using an electrocatalyst ink according to any one of claims 1 to 8.

15 14. A fuel cell comprising an electrocatalytic layer prepared using an electrocatalyst ink according to any one of claims 1 to 8.